

## REMARKS

Applicant has carefully studied the nonfinal Examiner's Action. The amendments appearing above and these explanatory remarks are believed to be fully responsive to the Action. Accordingly, this important patent application is now believed to be in condition for allowance.

Applicant responds to the outstanding Action by centered headings that correspond to the centered headings employed by the Office, to ensure full response on the merits to each finding of the Office. Although the amendments, above, render the rejections moot, Applicant submits these remarks as they are germane to the amended claims.

### **Claim Rejections – 35 USC § 112, ¶2**

Claims 1 and 4 were rejected under 35 USC §112, paragraph 2, as allegedly indefinite for failing to particularly point out and distinctly claimed the subject matter which applicant regards as his invention. This rejection is rendered moot by applicant's cancellation of claims 1 and 4. The rejection of claims 1 and 4 under 35 USC §112, paragraph 2, was given consideration in the drafting of the new claims.

### **Claim Rejections – 35 USC § 112, ¶1**

#### **Applicant need not describe all species in an enabled genus.**

A specification may, within the meaning of 35 U.S.C. § 112, ¶ 1 contain a written description of a broadly claimed invention without describing all the species that claim encompasses.<sup>1</sup> Thus, the mere fact that the specification fails to describe the full genus of encompassed compounds that have the function of inhibiting OCT-1 does not automatically mean that the application fails to meet the written description requirement. Genus claims are sufficiently enabled so long as one of ordinary skill in the art can "visualize or recognize the identity of the members of the genus" from reading the specification.<sup>2</sup>

The enablement of a genus under § 112, ¶ 1, can be established by showing the enablement of a representative number of species within the genus.<sup>3</sup> Applicants "are not required

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<sup>1</sup> *Utter v. Hiraga*, 845 F.2d 993 (Fed.Cir.1988).

<sup>2</sup> *Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559, 1568 (Fed.Cir.1997).

<sup>3</sup> *Id.*; see also

to disclose every species encompassed by their claims even in an unpredictable art.”<sup>4</sup> Disclosures of working examples that sufficiently describe the subject matter of claims are sufficient to support claims directed to a generic process.<sup>5</sup> Moreover, naming representative compounds encompassed by generic claim language is clearly not required by §112 or any other provision of the statute.<sup>6</sup> However, mention of representative compounds may provide an implicit description upon which to base generic claim language, even where no explicit description of a generic invention is to be found in the specification.<sup>7</sup>

Moreover, the Patent and Trademark Office has promulgated Guidelines<sup>8</sup> to be used by patent examiners in determining whether patent applications meet the written description requirement. According to the Guidelines, an application drawn to a genus meets the written description requirement if it either:

- (1) describes “a representative number of species by actual reduction to practice;” or
- (2) discloses “relevant, identifying characteristics, i.e. structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus.”<sup>9</sup>

Here, Applicant has set forth precise detail about the structural and chemical properties of the Oct-1 mechanism. Inhibitors of Oct-1 are similarly detailed by their functional characteristics coupled with the known correlation between Oct-1 function and structure. The Examiner’s Action itself points out that numerous inhibitors of Oct-1 are known. The very references cited by the Examiner show that Oct-1 inhibiting substances are sufficiently well known in the art such that one could routinely apply Applicant’s techniques to inhibit Oct-1 without undue experimentation. Accordingly, the working example provided in the specification coupled with the knowledge of the prior art is sufficient to enable the claimed genus of

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<sup>4</sup> See *Angstadt*, 537 F.2d at 502-03, 190 USPQ at 218(

<sup>5</sup> *Id.*

<sup>6</sup> *In re Robins*, 429 F.2d 452, 456-57, 166 USPQ 552, 555 (Cust. & Pat.App.1970)

<sup>7</sup> *Id.*

<sup>8</sup> *Guidelines for Examination of Patent Applications Under the 35 U.S.C. § 112.1 "Written Description Requirement"*, 66 Fed.Reg. 1099, 1106 (Jan. 5, 2001) (hereinafter “Guidelines”).

<sup>9</sup> *Id.*

compounds. Enablement does not require that the specification disclose that which is well known in the art.<sup>10</sup>

The Action does not fulfill the requirement that all the disclosures in a reference must be evaluated and that a reference is not limited to the disclosure of specific working examples.<sup>11</sup> For example, the specification provides detailed disclosure regarding the construction of a vector comprising antisense Oct-1 cdna which can be used to inhibit Oct-1 expression. The specification continues to discuss screening assays which can be used for identifying such inhibitors. Such screening assays, once identified, can be routinely used by those of ordinary skill in the art to screen compounds for similar activity. The Office has advanced no specific reasoning as to why the compound screening assays outlined in the specification would be unsuccessful in identifying other similar agents, which can act as inhibitors of Oct-1 and therefore has not provided sufficient evidence to support a finding of lack of enablement of the claimed invention.<sup>12</sup>

Enablement is a legal determination of whether a patent enables one skilled in the art to make and use the claimed invention,<sup>13</sup> and is not precluded even if some experimentation is necessary. All that is required is the amount of experimentation needed must not be unduly extensive.<sup>14</sup> Furthermore, a patent need not teach, and preferably omits, what is well known in the art.<sup>15</sup>

Methods of modulating gene expression, both in vitro and in vivo, were well known prior to Applicant's filing date. For example, U.S. Patent Nos. 5,776,502<sup>16</sup> and 6,136,779<sup>17</sup> teach a method of modulating, in vivo, the expression of a gene of interest, transcriptionally, which encodes a protein where the expression of which is associated with a defined physiological or pathological effect.

Moreover, methods to identify the necessary characteristics, including affinity, of expression modulators, such as those used in the invention were known in the art at the time the

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<sup>10</sup> *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d at 1384, 231 USPQ at 94.

<sup>11</sup> *In re Mills*, 470 F.2d 649, 651, 176 USPQ 196, 198 (CCPA 1972)

<sup>12</sup> *Ex Parte Carl H. June*, Appeal No. 1999-1245 Application No. 08/245,282

<sup>13</sup> *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 960, 220 USPQ 592, 599 (Fed.Cir.1983)

<sup>14</sup> *Atlas Powder Co. v. E.I. Du Pont De Nemours & Co.*, 750 F.2d 1569, 1576, 224 USPQ 409, 413 (Fed.Cir.1984),

<sup>15</sup> *Lindemann*, 730 F.2d at 1463, 221 USPQ at 489.

<sup>16</sup> U.S. Patent No. 5,776,502 to *Foulkes et al.*, Filed June. 2, 1995

<sup>17</sup> U.S. Patent No. 6,136,779 to *Foulkes et al.*, Filed Jan. 6, 1997

application was filed. Furthermore, the Office has not produced any evidence that undue experimentation would be required by those skilled in the art to practice this invention. Rather, the Office has cited *per se* rules, which have been previously and expressly condemned by the courts, relying on generalized articles. With regard to the paragraph cited by the Office, *Opalinska* expressly states that “*as a general rule*, oligonucleotides are taken up primarily through a combination of adsorptive and fluid-phase endocytosis.”<sup>18</sup> Applicant respectfully reminds the office that whether the specification for a challenged claim meets the enablement requirement is a question of fact to be assessed on a case-by-case basis.<sup>19</sup> The specification of the application and the references highlighted by the Office show that the modulation of Oct-1 was known in the art. Here the Office has not provided any analysis specific to the claims to show that one skilled in the art would not be able to practice this invention, as is its burden.

The specification also shows that the 5637 cell line correlates to the breadth of the claims. The issue of "correlation" is dependent on the state of the prior art, and the art of record is such that this particular model is recognized as correlating to tumor growth. For example, The ATCC CULTURES™ cell line list,<sup>20</sup> attached hereto, lists tumor cell lines from a variety of species. Cell lines that are known to be from metastatic sites, including the 5637<sup>21</sup> line used as a prophetic example, are listed. See also *Muthing*, wherein the 5637 cell line was selected as representing malignant cells of epithelial morphology.<sup>22</sup> Lastly, Applicant's specification clearly shows the requisite correlation of the prophetic example to the claimed activity since the 5637 cell line possess “increased Oct-1 binding activity” and that “Oct-1 is hypophosphorylated in 5637 cells, which subsequently increases its DNA binding activity” and have a “high level of active Oct-1 as compared to non-cancerous cells.”<sup>23</sup>

As such, the prophetic example should be accepted as correlating since the Office has not offered any evidence that this model does not correlate. Even with such evidence, the Office

<sup>18</sup> *Opalinska*, page 511, col. 2.

<sup>19</sup> *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1561, 1563 (Fed.Cir.1991); *Eli Lilly*, 119 F.3d at 1566.

<sup>20</sup> <http://www.atcc.org/documents/pdf/CellCatalog/TumorLines.pdf>

<sup>21</sup> Page 142

<sup>22</sup> *Preferential Binding Of The Anticancer Drug Viscumin (Recombinant Mistletoe Lectin) To Terminally  $\alpha$ 2-6-Sialylated Neolacto-Series Gangliosides*; *Muthing et al.*, *Glycobiology*, Vol. 12, no. 8, pp 485-497, 2002.

<sup>23</sup> [Para 31]

must weigh the evidence for and against correlation to show whether one skilled in the art would accept the model as reasonably correlating to the condition.<sup>24</sup>

The Office has not met the initial burden to give relevant reasons for the lack of enablement. Similarly the Office has not given case-specific reasons for a conclusion of lack of correlation of an *in vitro* example. Applicant is not required to establish a rigorous or an invariable exact correlation.<sup>25</sup> Based upon the relevant evidence as a whole, there is a reasonable correlation between the disclosed *in vitro* utility and an *in vivo* activity, and therefore a rigorous correlation is not necessary here; therefore, *in vivo* activity is reasonable based upon the probative evidence.

### **Claim Rejections – 35 USC § 102**

Applicant acknowledges the quotation of 35 USC §102. Claims 1 and 3 stand rejected under 35 USC §102(b) as being anticipated by Weiser *et al.* As the Office recognizes in the Action, the claimed invention is directed to a method of modulating tumor growth by contacting a target cell with an inhibitory substance that prevents Oct-1 mRNA function. The Office also recognizes that Weiser *et al.* disclose an inhibitor of Oct-1 administered to vascular smooth muscle cells. The Office continues that “absent evidence to the contrary the disclosed method would be expected to modulate tumor growth.”<sup>26</sup> Respectfully, this is not the standard by which un-patentability is to be determined. It is the duty of the Office to make a *prima facie* case of un-patentability. Here the Office has not provided any facts to support its conclusion.

It is well settled that “anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration.”<sup>27</sup> The single reference must also disclose each element of the claimed invention “as arranged in the claims.”<sup>28</sup> It is not enough that the reference teach all the claimed elements in isolation, or in a different relation. Therefore, if the prior art reference includes all the elements that are claimed, if the arrangement of the claimed

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<sup>24</sup> *In re Brana*, 51 F.3d 1560, 1566, 34 USPQ2d 1436, 1441 (Fed. Cir. 1995) (reversing the PTO decision based on finding that *in vitro* data did not support *in vivo* applications).

<sup>25</sup> *Cross v. Iizuka*, 753 F.2d 1040, 1050, 224 USPQ 739, 747 (Fed. Cir. 1985)

<sup>26</sup> Detailed Action, page 8

<sup>27</sup> See W.L. Gore & Assocs. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303,313 (Fed. Cir. 1983).

<sup>28</sup> See *Lindermann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1542, 221 USPQ 481, 485 (Fed. Cir. 1984).

elements is different from the arrangement of the prior art elements, anticipation cannot be found.<sup>29</sup>

Here, the Office has not taken into account the terminology in the preamble that limits the structure of the claimed invention, and therefore must be treated as a claim limitation.<sup>30</sup> The MPEP provides specific guidance in this regard. Citing *Jansen v. Rexall Sundown, Inc.*<sup>31</sup> as illustrative, the MPEP refers to a claim directed to a method of treating or preventing pernicious anemia in humans by administering a certain vitamin preparation to "a human in need thereof." The court held that the preamble is not merely a statement of effect that may or may not be desired or appreciated, but rather is a statement of the intentional purpose for which the method must be performed. Thus the claim is properly interpreted to mean that the vitamin preparation in question was to be administered to a human with a recognized need to treat or prevent pernicious anemia.

Here, Applicant has specifically claimed a process of treating a tumor. The Office has recognized the prior art is silent with this regard; accordingly this element is not shown in the prior art.

### ***Conclusion***

Entry of a Notice of Allowance is solicited. If the Office is not fully persuaded as to the merits of Applicant's position, or if an Examiner's Amendment would place the pending claims in condition for allowance, a telephone call to the undersigned at (813) 925-8505 is requested.

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<sup>29</sup> Donner, Irah H; *Patent Prosecution; Practice and Procedure Before the U.S. Patent Office*; BNA Books, 1999

<sup>30</sup> MPEP §2111.02; See, e.g., *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989) (The determination of whether preamble recitations are structural limitations can be resolved only on review of the entirety of the application "to gain an understanding of what the inventors actually invented and intended to encompass by the claim."); *Pac-Tec Inc. v. Amerace Corp.*, 903 F.2d 796, 801, 14 USPQ2d 1871, 1876 (Fed. Cir. 1990) (determining that preamble language that constitutes a structural limitation is actually part of the claimed invention).

<sup>31</sup> *Jansen v. Rexall Sundown, Inc.*, 342 F.3d 1329, 1333-34, 68 USPQ2d 1154, 1158 (Fed. Cir. 2003)

Very respectfully,  
SMITH & HOPEN

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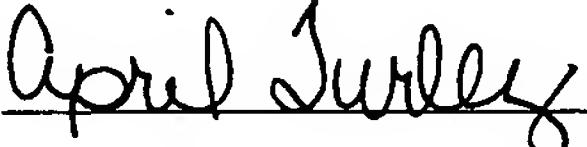
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CERTIFICATE OF MAILING

(37 C.F.R. 1.10)

I HEREBY CERTIFY that this Amendment A, including Introductory Comments, Amendments to the Claims and Amendments to the Remarks is being deposited with the United States Postal Service as "Express Mail Post Office to Addressee," Mailing Label No. **EV917113071US** in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on June 2, 2006.

Dated: June 2, 2006



April Turley